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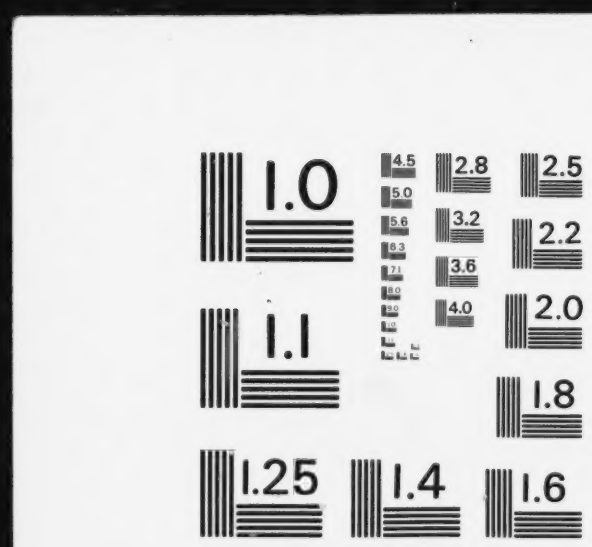

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ABSTRACT
Microteaching, a technique for training teachers to develop specific teaching skills through the use of a scaled down classroom situation, has proved to be not only effective but also strongly appealing to teachers. A state-of-the-art paper entitled "Microteaching: History and Present Status" prepared by the authors for the ERIC Clearinghouse on Teachers Education is the basis for this PREP report. Three of the documents in this kit, "Microteaching: Definition and Overview," "Uses of Microteaching" and "Research Evidence of Microteaching Effectiveness," were written by Drs. Dwight W. Allen and James M. Cooper. "Equipment Unique to Microteaching" and "Selected Programs Using the Microteaching Technique" were prepared by Mrs. Lorraine Poliakoff. An annotated bibliography is included. (For the original publication see ED 036 471). (Author/LS)

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PREP

putting
research
into
educational
practice

PROBLEM ► RESEARCH ►

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PREP PREP PREP BRIEF

No. 17

MICROTEACHING

"I never realized how boring I could be!" Such was the response of Mrs. Susan K., a student teacher, after viewing her teaching on videotape. "In those 10 minutes of discussion, I talked for at least 8." Mrs. K., like so many new and even veteran teachers, felt uneasy about too long a silence in the classroom. Instead of either giving the students time to ponder her questions or even leaving a question unanswered now and then to provoke more thought about it, she felt compelled to answer the questions herself. Thus she was doing most if not all the talking and was by no means encouraging her students to think for themselves. One view of herself on videotape, however, fired her with new insights. Mrs. K. affirmed that never before in her teacher training had her weaknesses and faults, as well as her strengths, been made so clear to her. She was convinced now of her need to master the teaching technique of silence and nonverbal cuing.

The teacher training technique that enabled Mrs. K. to assess her teaching skills and to see herself as others, especially her students, see her in class daily is *microteaching*.

What Is Microteaching?

Microteaching is a teaching situation which is scaled down in terms of time and numbers of students--usually a 4- to 20-minute lesson involving 3 to 10 students. By scaling down the lesson, some of the complexities of the teaching act are reduced, allowing the teacher to focus on selected aspects of teaching. Frequently a microteaching episode includes teaching a lesson and receiving immediate feedback on the teacher's effectiveness. The feedback may come from videotape or audiotape, recordings, supervisors, pupils, colleagues, and/or from the teacher's self-perceptions.

Microteaching, despite its widespread use as a teacher-training procedure since its inception at Stanford University in 1963, is still considered an innovation in teacher education, and a highly effective one. The technique focuses on the teacher's mastering one teaching skill at a time--thus the teaching is "micro." The skills refer to specific teacher behavior designed to influence learners in a predetermined direction. This approach is based on the assumption that, by breaking down the complex teaching act into more easily learned skills, the teacher can gradually acquire a repertoire, the teacher increases his flexibility and versatility, and thus is able to adapt his teaching style to suit the students' needs or the objectives of the lesson.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE/Office of Education

National Center for Educational Communication

The Development of Teaching Skills Through Microteaching

Since 1963, over 20 different general teaching skills applicable to elementary and secondary teachers across most subject matter areas have been developed. Some of the skills which may be developed through the microteaching technique include:

- Fluency in asking questions
- Probing questions
- Higher order questions
- Divergent questions
- Use of examples
- Planned repetition
- Closure
- Lecturing
- Cuing

Some Noted Advantages of Microteaching

- The fact that microteaching is real teaching, allowing the trainee to work with content in his own area of competence and to do so with real students, lends validity to the technique.
- Microteaching provides a setting in which the trainee can teach students of varying backgrounds, intellectual abilities, and age groups before facing a class during his student or intern teaching.
- Microteaching is a low risk situation for both teacher and pupils. It is not part of the pupils regular curriculum; therefore, their learning is not endangered. Similarly, the teacher need not fear failure for the same reason.

Uses of Microteaching

Preservice training--Microteaching's primary use to date has been for preservice training of student or intern teachers.

Inservice training--Several uses of microteaching for inservice teachers include microteaching (1) as a trial framework for team presentation, (2) as a site for ascertaining the proper instructional level of materials, (3) for preemployment prediction, and (4) for training supervisors to evaluate beginning teachers.

Peace Corps training--Microteaching has become a major component in the volunteers' training in Peace Corps centers.

Microcounseling--A group of professors at Colorado State College, Greeley, developed "microcounseling," a process whereby trainees systematically practice basic component skills of counseling.

Supervisor training--At a clinic held at Whitman College, Walla Walla, Washington, microteaching proved worthwhile for supervisors' training in many skills.

Training college teachers--A professor at the University of Illinois found microteaching very helpful in assisting college teachers.

For More Information

A state-of-the-art paper entitled "Microteaching: History and Present Status" has been prepared by Dr. James M. Cooper and Dr. Dwight W. Allen of the University of Massachusetts, Amherst, for the ERIC Clearinghouse on Teacher Education. The paper is available from the ERIC Document Reproduction Service (EDRS), 4936 Fairmont Blvd., Bethesda, Maryland 20014 under the identifying number ED 036 471 for a cost of 25 cents for microfiche and $1.95 for hard copy.

A PREP kit--No. 17--entitled "Microteaching" has been adapted from the clearinghouse product. The kit contains six documents which cover various aspects of microteaching: definition and overview; uses; research evidence of its effectiveness; equipment used in the technique; selected programs using the microteaching technique; and an annotated bibliography. The PREP kit will also be available from EDRS.

PREP

MICROTEACHING

No. 17

PREP is . . .

- *a synthesis and interpretation of research, development, and current practice on a specific educational topic*
- *a method of getting significant R&D findings to the practitioner quickly*
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- P *utting*
  R *esearch into*
  E *ducational*
  P *ractice*

Microteaching--a technique for training teachers to develop specific teaching skills through the use of a scaled-down classroom situation--has proved to be not only effective but also strongly appealing to teachers. The technique involves placing a teacher before a camera to teach a 4- to 20-minute lesson to 3 to 13 students; instantly replaying the videotape of his performance; and having him and his colleagues, supervisor, or pupils evaluate his effectiveness. He may then reteach the same lesson on camera, practicing what he has learned through self-observation, evaluation, and practice.

Another product of an ERIC clearinghouse--the Clearinghouse on Teacher Education, Washington, D.C.--is the basis of this PREP report on microteaching. Three of the documents in this kit--"Microteaching," Definition and Overview," "Uses of Microteaching," and "Research Evidence of Microteaching Effectiveness"--were written by Dr. Dwight W. Allen and Dr. James M. Cooper of the University of Massachusetts, Amherst. Dr. Cooper also prepared the "Annotated Bibliography on Microteaching." The remaining two documents--"Equipment Unique to Microteaching" and "Selected Programs Using the Microteaching Technique"--were prepared by Mrs. Lorraine Poliakoff of the ERIC clearinghouse staff, with additional material supplied by the Stanford Center for Research and Development in Teaching, Palo Alto, California.

The original publication from which most of the material in this kit was adapted, Microteaching: History and Present Status by Drs. Allen and Cooper, is available from the ERIC Document Reproduction Service (EDRS), 4936 Fairmont Blvd., Bethesda, Maryland 20014 (ED 036 471, MF - 25¢, HC - $1.95). The PREP report will also be available from EDRS.

National Center for Educational Communication/OFFICE OF EDUCATION

PRIP

No. 17-A

MICROTEACHING: DEFINITION AND OVERVIEW

Since its inception in 1963, microteaching has become an established teacher-training procedure in many colleges, universities, and school districts. James A. Johnson of Northern Illinois University, in a national survey of student-teaching programs, cites figures which indicate that 44 percent of all teacher education programs use some form of microteaching.[1] Despite its apparent widespread usage, microteaching is still considered an innovation in teacher education as evidenced by the introductory presentations on microteaching that appeared at the 1969 national conventions of the American Educational Research Association, the American Association of Colleges for Teacher Education, the Association for Supervision and Curriculum Development, and the National Catholic Education Association. Like other educational innovations, microteaching has frequently been implemented without regard to the existence of research evidence which validates its use.

Microteaching Defined

Defined most succinctly, microteaching is a teaching situation which is scaled down in terms of time and numbers of students. Usually, this has meant a 4- to 20-minute lesson involving 3 to 10 students. The lesson is scaled down to reduce some of the complexities of the teaching act, thus allowing the teacher to focus on selected aspects of teaching. Frequently, one microteaching episode includes teaching a lesson and immediate feedback on the teacher's effectiveness. This feedback may come from video- or audiotape recordings, supervisors, pupils, colleagues, or from the teacher's self-perceptions. Some of the variable aspects of microteaching include lesson length, number of reteaches, the amount and kind of supervision, the use of video- or audio-tape recordings, and number and types of pupils.

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[1]Johnson, James A. "A National Survey of Student Teaching Programs." De Kalb, Ill.: Northern Illinois University, July 1968. p. 56. (Unpublished doctoral dissertation.)

Microteaching is not synonymous with simulated teaching. Rather, the teacher is a real teacher, the students are real students, and learning does occur in the short lessons. Many reports of microteaching programs describe the students as peers, that is, fellow student teachers. The authors of this paper do not consider this to be microteaching. In many cases, the peers are usually role playing, acting as they think secondary and elementary school students would behave. Even if they are not role playing, but behaving naturally, they are still not part of the population the student teachers are preparing to teach. While peer teaching can be a very valuable experience, the authors believe it should not be equated with microteaching, in which the students are "real."

History

Although a simple idea, microteaching was late arriving on the educational scene. It developed at Stanford University, California, in 1963 from an attempt to find a new, more effective initial method of training pre-intern teachers. The original efforts had produced the demonstration lesson, where the interns were asked to teach a game to a group of four students. These students were role-playing stereotyped students: slowpoke, couldn't-care-less, eager, and know-it-all. The situation was rigged to provide the interns with a lesson in humility designed to impress upon them the need to learn instructional techniques.

From the extremely artificial situation developed the concept of microteaching. Instead of having students role play, they were asked to prepare a short lesson of their own choosing in their subject matter area. Although this procedure was deemed by the Stanford Secondary Education Project staff as an improvement over the demonstration lesson, it still seemed to lack direction. What was missing was the teaching techniques dimension. In the summer of 1963, Horace Aubertine developed the technical teaching skill "How To Begin a Lesson" as part of a research study (Allen and Ryan, 1969).[2] The interns were instructed to use this skill in their microteaching lessons. As a result of this experience, the practice of focusing on one skill at a time evolved and proved to be quite successful. It was decided that, for future microteaching clinics, additional teaching skills would be developed.

These teaching skills refer to specific teacher behavior designed to influence learners in a predetermined direction (Johnson, William D., 1967). This required that both teacher and learner behaviors be operationally defined and that the desired interactions be derived from a theoretical rationale.

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[2]Full citations appear in the "Annotated Bibliography on Microteaching," document No. 17-F

The teaching skills approach is based on the assumption that, by breaking down the complex teaching act into more easily learned skills, the teacher can gradually acquire a repertoire of teaching skills to use in the actual classroom. By building a repertoire of skills the teacher is increasing his flexibility and versatility. He has more teaching techniques at his command in order to vary his questions, reinforcement, or presentation styles. Thus, he is able to adapt his teaching style to suit the students' needs or the objective of the lesson. There is research evidence which indicates that the flexible teacher, the one who can adapt his teaching methods, is a more effective teacher in producing positive student performance and attitude than a teacher who lacks this versatility.[3]

The most widespread use of microteaching, therefore, has focused on the teacher's development of a repertoire of teaching skills. Since 1963, over 20 different general teaching skills applicable to elementary and secondary teachers across most subject matter areas have been developed. Most of these skills were identified through an informal task analysis of teachers in their classrooms. Once the skill was identified, its behavioral components were isolated and training protocols were developed using a microteaching format. A partial list and description of these skills as they relate to microteaching follow:

1. *Fluency in Asking Questions.* The emphasis is on the teacher asking as many questions as possible during the lesson. This skill is practiced in order to develop a new teaching pattern in the classroom for the teacher who tends to depend too heavily on the lecture method. Having achieved this goal, the teacher can then place emphasis on higher order or divergent questions.

2. *Probing Questions.* Probing requires that teachers ask questions that require pupils to go beyond superficial "first-answer" questions. This can be done by asking pupils for more information and/or more meaning; requiring the pupil to rationally justify his response; refocusing the pupil or giving him hints; and bringing other students into the discussion by getting them to respond to the first student's answer.

3. *Higher Order Questions.* Higher order questions are defined as questions which cannot be answered from memory or simple sensory description. They call for finding a rule or principle rather than defining one. The critical requirements for a "good" classroom question is that it prompts students to use ideas rather than just remember them. Although some teachers intuitively ask questions of high quality, far too

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[3]Hamacheck, Donald. "Characteristics of Good Teachers and Implications for Teacher Education." *Phi Delta Kappan*, February 1969. p. 343.

many over-emphasize those that require only the simple cognitive activity on the part of the students and to provide practice in forming and using higher order questions.

4. *Divergent Questions.* These questions are characterized by the fact that there are no "correct" answers. They are usually open-ended questions, requiring the students to think creatively, to leave the comfortable confines of the known, and to reach out into the unknown. They ask students to make hypotheses and use their imaginations to reorganize concepts into novel patterns.

5. *Reinforcement.* Reinforcement is an incentive skill used by the teacher to reward students for proper behaviors. The skill focuses on the teacher's use of positive reinforcement to increase student participation in classroom discussions.

6. *Recognizing Attending Behavior.* This is a skill designed to sensitize and alert the teacher to what is going on in his classroom by observing the cues his students present. By observing their facial expressions, body postures, activity- or nonactivity-directed behaviors, and conversations, the teacher can tell a great deal about their interest level and attention span. From these cues the teacher can make judgments about whether to continue the activity, change it, slow down, speed up, or use a different mode of instruction. Recognizing student attending behavior is a prerequisite for almost any kind of classroom instructional or management decision.

7. *Silence and Nonverbal Cues.* This skill is designed to allow the teacher to control and direct classroom discussions without talking. Nonverbal communication is one of the most neglected means of teacher-student communication, but one of the most powerful. The skill focuses on the controlled use of teacher silence to get students to speak, and on techniques of nonverbal communication.

8. *Cuing.* This skill is designed to give the teacher much more control over the success experience a student has in answering a question or in making a comment. By cuing him ahead of time and through the kinds of cues given, the teacher can greatly increase the student's chances of making a worthwhile contribution to the class.

9. *Set Induction.* This skill is concerned with properly preparing students for some upcoming activity. It includes an interesting and/or novel way of introducing the activity and establishing common frames of reference between the teacher and students in order to facilitate communication. It is basically an initiating activity by the teacher.

10. *Stimulus Variation.* This skill deals with both verbal and nonverbal techniques of stimulating students in order to preclude boredom and apathy in the classroom. It is basically concerned with the teacher varying his behaviors in order to keep the students attentive and alert.

11. *Closure.* This skill is complementary to set induction. It consists of teacher activities that will help the students perceive a logical organization of the main ideas and pieces of factual information presented in the lesson. In addition to pulling together the major points and acting as a cognitive link between past knowledge and new knowledge, closure provides the pupil with a needed feeling of achievement.

12. *Lecturing.* Training in some of the successful techniques of lecturing is the focus for this skill. Delivery techniques, use of audiovisual materials, set induction, pacing, closure, planned repetition, and other skills related to lecturing are included. Rather than saying that lecturing is bad as an instructional technique, this skill tries to consider when it is effective to lecture and how to lecture effectively.

13. *Use of Examples.* The use of examples is basic to good, sound, clear teaching. Examples are necessary to clarify, verify, or substantiate concepts. Both inductive and deductive uses of examples can be used effectively by the teacher. Effective use of examples includes starting with simple examples relevant to students' experience and knowledge, relating the examples to the principles or ideas being taught, checking to see if the objectives of the lesson have been achieved by asking students to give examples which illustrate the main point, using analogies and metaphors to relate the unknown with the known or to liven up the examples.

14. *Planned Repetition.* The purpose of this skill is to clarify and reinforce major ideas, key words, principles, and concepts in a lecture or discussion. The use of planned repetition is a powerful technique in focusing and highlighting important points and in describing them from different points of view. Improper use of this skill can cause confusion and poor learning among students, while proper use can direct their attention to points which the teacher wishes to emphasize. The skill focuses on techniques of literal repetition--simple repetition, spaced repetition, cumulative repetition, and massed repetition.

15. *Completeness of Communication.* Although the importance of and need for clear communication are blatant, clarity is not often the guiding principle in actual communication. Sensitivity training on the importance and the difficulty of being understood is the focus of this skill. A classroom game has been devised which dramtically demonstrates to teachers that what they consider to be clear instructions are often not clear at all to the students. Sensitivity training in the skill of communicating with others will hopefully produce teachers who are more responsive to possible miscommunication.

Rationale

The rationale for microteaching as a teacher-training technique has been set forth by several authors:

1. The fact that microteaching is real teaching, albeit constructed in the sense that teacher and students work together in a practice situation, is a point made by several authors (Allen and Ryan, 1969; Allen and Clark, 1967).

2. Microteaching reduces the complexities of normal classroom teaching, thus allowing the teacher to concentrate on the acquisition of a teaching skill (Cooper, 1967; Allen and Ryan, 1969; Bush, 1966).

3. Knowledge and information about performance aid the learner (in this case the teacher) to acquire a teaching skill. The immediate feedback from videotape recorders, supervisors, pupils, and colleagues provides a critique of the lesson which will help the teacher constructively modify his behavior (Meier, Summer 1968).

4. Microteaching considers the trainee's capacities by allowing him to select the content of the lesson from the area of his greatest competence (Meier, Summer 1968).

5. Microteaching provides a setting in which the trainee can teach students of varying backgrounds, intellectual abilities, and age groups before facing a class during his student or intern teaching (Allen and Clark, 1967).

6. Microteaching permits greater control over the trainees' environment with regard to students, methods of feedback, supervision, and many other manipulatable variables (Allen and Ryan, 1969).

7. Microteaching provides a low threat situation in which to practice teaching skills, a situation which should be more conducive to learning than the high anxiety level exhibited by many beginning teachers when practicing in actual classrooms (Allen and Clark, 1967).

8. Microteaching is a low risk situation for both teacher and pupils. Microteaching is not part of the pupils' regular curriculum; therefore, their learning is not endangered. Similarly, the teacher need not fear failure for precisely the same reason (Allen and Clark, 1967).

9. Since active participation by the trainee is preferred, and meaningful materials and tasks are desirable for optimal learning to occur, the microteaching setting allows the student to perfect certain skills that he will subsequently be expected to perform in the regular classroom (Meier, Summer 1968).

10. Microteaching allows for the repetitive practice necessary to overlearn skills which will be used during regular teaching (Meier, Summer 1968).

11. Microteaching incorporates spaced or distributed practice of a skill over a period of time, allowing for the neurophysiological consolidation of the new data for long-term storage and retrieval (Meier, Summer 1968).

None of the cited authors looks upon microteaching as a panacea for the ills of teacher education. For example, the problems of classroom control and discipline have yet to be successfully solved within a microteaching format. But the authors are virtually unanimous in their praise of microteaching as a technique for training teachers to use some basic teaching skills (Meier, Summer 1968; Allen and Ryan, 1969; Kallenbach, 1966; Bush, 1966; Fortune, 1967).

PREP

USES OF MICROTEACHING

No. 17-B

Preservice Training

Microteaching's primary use to date has been for preservice training of student or intern teachers. This was the original purpose of microteaching as it developed at Stanford University. Using the microteaching format, preservice training has primarily focused on the acquisition of teaching skills.

The usual format at the preservice level has been for the trainee to first receive instruction in the particular skill to be practiced. This instruction may be written, oral, videotaped, or filmed. A number of institutions use a combination of these methods (Ward, 1969). After the skill is explained, the trainees often see a videotaped or filmed model of a teacher demonstrating that skill. This model is discussed until the trainees are clear as to the skill they will be practicing in microteaching. Ward found that the skills most often used were asking questions, using reinforcement techniques, establishing set, using examples, and varying the stimulus.

The trainee then teaches a short lesson, usually 5 to 10 minutes, in his own subject field and of his own choosing, to a small number of students while trying to master the skill. Whenever possible, the lesson is video- or audiotaped to allow the trainee to observe and/or hear himself. There is usually a supervisor present who helps the trainee analyze the strengths and weaknesses of the lesson and discusses how the lesson might be improved. Frequently, colleagues or other trainees will observe one another teaching and offer their comments on the lesson. A number of programs also utilize student feedback to help the teacher in a critique of the lesson.

One hundred and twenty-five institutions use the videotape recorder in microteaching for secondary school teachers (Ward, 1969). Although videotape equipment is not necessary for microteaching, it adds tremendous power to the feedback dimension.

After the critique, the trainee usually has a break period in which he replans the lesson in order to incorporate the suggestions from

the critique. Although there is no solid research evidence regarding the optimal length of time for planning, there is some evidence that 15 minutes or less is not long enough (*Microteaching: A Description*, 1966).

Once the teacher has replanned the lesson, he teaches it again to a different group of students in order to get initial responses from the students. Ninety-nine institutions out of 136 replying to Ward's survey questionnaire indicated that they either always or sometimes used the teach-reteach cycle. After the reteach lesson, the same sources of feedback are used again in the critique.

This cycle can be repeated as often as desired while the trainee continues to develop a particular skill. Usually, however, after one teach-critique/reteach-critique cycle, the trainee will plan new content while continuing to practice the same skill.

One interesting point should be noted. Despite the authors' prejudice against using peers as students, 111 institutions indicated that they did use peers instead of actual pupils (Ward, 1969). Probably the main reason for using peers is the difficulty encountered in obtaining actual pupils. These pupils are in school all day and therefore usually are available for microteaching only in the evening. This is especially true if the microteaching is conducted at a college or university rather than at the public schools, and the university is by far the most common locale for microteaching (Ward, 1969). If the program operates during the summer, actual students can be paid for their services; but many institutions find the cost restrictive. As a consequence, the utilization of peers as students, at least at the secondary level, far outnumbers the use of actual students for the microteaching process at the preservice level.

Another format that has been used is a 20- to 25-minute lesson, followed by a 30- to 40-minute critique. This training protocol was used at Stanford following 3 weeks of the teach-critique/reteach-critique format. There were several reasons for changing the pattern. By lengthening the time of the lesson, the trainee was able to start planning and teaching lessons which were closer in length to the lessons he would teach in the regular classroom. This longer format ran for 3 weeks, during which time the trainees were divided into teams of three or four. These teams then planned a 3-week unit to teach to a single group of students. The team members selected the objectives, organized the learning experiences, and decided how they would evaluate the lesson. This process gave them experience in team planning, team teaching, the construction of a teaching unit, and an opportunity to work with a single group of students over an extended period of time. Although each of the trainees was working on a particular skill during this 3-week period, the major concern during the critique sessions was less with the skill than the appropriateness of objectives and techniques, organization, and student involvement. No formal evaluation was ever made to compare the effectiveness of the two microteaching formats described, but the

general feeling of the trainees and the supervisors at Stanford was that the shorter lesson was more effective for some skills, such as silence and nonverbal communication, while the longer lesson was more effective for skills such as set induction and closure.

Inservice Training

Although microteaching's greatest use has been at the preservice level, increasing interest in this technique is being generated at the inservice level. Several uses of microteaching for inservice teachers have been suggested (Allen, 1966). These include microteaching (1) as a trial framework for team presentation, (2) as a site for ascertaining the proper instructional level of materials, (3) for preemployment prediction, and (4) for training supervisors to evaluate beginning teachers.

One example of microteaching's inservice use is provided by the *Jefferson County, Colorado,* extended summer program (Meier, Summer 1966). This program was designed to upgrade the entire instructional program in the school district by providing inservice training opportunities in team teaching and flexible scheduling. Each teaching team used microteaching to perfect curriculum before trying it before a whole class, and the videotape of the micro-lesson was viewed by the team to evaluate its teaching. By the summer's end more than one hundred competent teachers had experienced microteaching, along with several hundred children who had participated in an enriching experience. Meier reports that the school system has benefited enormously from this massive inservice training program and has since introduced many of its validated innovations into the regular school-year program.

Meier also reports on another inservice program conducted under the auspices of the National Defense Education Act, Title XI, by the Child Study Institute at *Colorado State College, Greeley* (Meier, Summer 1968, and November 1968). One hundred teachers in early childhood education programs throughout the country received training in how to manage new programs for preschool and beginning school children. This inservice program was conducted by means of filmed learning episodes, videotaped recordings of the teachers' efforts to recreate the learning episodes in their own locations, and supervision provided by personnel located at the Child Study Institute. This long-distance microteaching was conducted in the following manner. After watching the filmed learning episodes and reading the accompanying written materials, each teacher tried to achieve the objectives of the episode through a microteaching process. After practicing several times, the teacher mailed a representative videotape of his efforts to the Child Study Institute, where a team critique was made, an evaluation given, and the recording and evaluation mailed back to the teacher. When the teacher was satisfied that he had achieved the objectives of the episode, a new unit was sent to him. Upon completion of the course, the participating teachers received college credit from Colorado State College. The effectiveness of the training program was assessed by determining the teachers' attitudes and opinions about

the method of training and by observing changes in the teachers cognitive and affective behavior through analysis of the microteaching critique instruments. The trainees showed growth on both the cognitive and attitude tests which were administered at the beginning and end of the program.

Probably the most comprehensive development of microteaching for inservice training is that being conducted by the *Far West Laboratory for Educational Research and Development, Berkeley, California.* Its "minicourse" model utilizes instructional films, handbooks, evaluation forms, a microteaching format, and videotaped recordings of teachers' lessons. The minicourse is discussed in more detail later.

Another inservice project combined microteaching and interaction analysis for teachers in *El Dorado County, California* (Minnis, 1968). Twenty-eight experienced teachers were enrolled in a university extension course which had cognitive process in science as a focus. After receiving training in interaction analysis and new teaching strategies in science, each strategy was translated into a teaching pattern which was practiced in a microteaching setting. Significant differences in pretest and posttest percentile scores for the participating teachers and feedback from building principals confirmed that the participating teachers continued to try new teaching behaviors in the classroom and retained a positive attitude toward the microteaching-interaction analysis combination.

The *General Learning Corporation of New York City* has attempted to overcome one of the major drawbacks preventing successful inservice microteaching--the lack of written materials describing skills and accompanying filmed models of teachers demonstrating those skills. Without a high level of expertise available, most school districts were unable to generate a successful microteaching program. The publication *Teaching Skills for Elementary and Secondary School Teachers* (Allen and others, 1969) has made detailed skills descriptions and accompanying filmed models available to school districts and colleges for both inservice and preservice training.

Although microteaching's usage has been greater at the preservice level, its popularity as an inservice training procedure seems to be increasing. Ward (1969) reports that there are 53 colleges and universities that have contributed indirectly to the use of microteaching techniques for inservice education in their respective States. In addition, there are probably school districts using microteaching without consultation with a college.

Peace Corps Training

A large number of Peace Corps volunteers are trained to be teachers. Since the normal tour of duty is only 2 years, a condensed teacher-training program is essential in order to utilize the volunteers' time effectively. It was only natural that the efficiency of microteaching as a teacher-training procedure be explored. Microteaching became a major component in the volunteers' training in at least

two Peace Corps centers.

The first center was located at *Stanford University, California,* and was the site for training 49 volunteers for assignments in the Philippines. The microteaching clinic had three objectives: to teach the volunteers skills related to the teaching of English as a second language, to acquaint them with special materials for teaching English as a second language, and to provide a reality test during which the volunteers could decide if they really wanted to become elementary school teachers in the Philippines for the next 2 years (Allen and Eve, 1968). Using Filipino students who had been in the United States for less than 6 months, the microteaching experience provided contact with students who spoke little or no English, thus representing a good test of the trainees' ability to communicate with native children. Beginning with a 5-minute, four-pupil format, the trainees moved to larger classes, longer lessons, more demanding subject matter, and finally complex interpersonal situations in which to make teaching decisions.

A second case of using microteaching for Peace Corps training involved a group of 330 volunteers going to Micronesia (Allen and Ryan, 1969). Using an abandoned bathhouse which was being renovated during the microteaching, and Cuban refugee children who spoke little English, the clinic concentrated on preparing TESL (Teaching English as a Second Language) teachers. The clinic format was basically a 5- to 10-minute lesson, with a 10-minute critique involving two trainees and the supervisor. There were no videotape recorders. Different techniques for getting across the same sentence structure, aspects of the lesson that might have been confusing to the students, and similar techniques and problems were discussed. Since the children were not changed, the reteach lessons were extensions of the first lessons. A survey indicated that 97 percent of the trainees felt microteaching was "valuable" or "extremely valuable" in their preparation for teaching. Over 95 percent recommended microteaching experience for future trainees.

Microcounseling

A fruitful adaptation of microteaching has occurred recently in counselor education. While at *Colorado State College, Greeley,* Allen Ivey and his colleagues developed "microcounseling," a process whereby trainees systematically practice basic component skills of counseling (Ivey and others, 1968). Thus far, three controlled research studies involving microcounseling have been conducted. The three skills that have been identified are attending behavior, Rogerian reflection of feeling, and summarization of feeling.

The first, attending behavior, is considered by Ivey to be one of the basic counseling skills. He defines the skill as attending or listening to a client both verbally and nonverbally. The skill is behaviorally defined as establishing eye contact with the client; communicating attentiveness through gestures, movements, and posture positions; and demonstrating verbal attention by responding to the client's last comment without introducing new data.

The second, reflection of feeling, is also considered a key counseling skill. Communication of warmth and genuineness are the essential dimensions of this skill. Microcounseling treats reflection of feeling as a type of attending behavior in which the counselor selectively attends to one certain aspect of his interaction with the client.

The third, summarization of feeling, is an extension of the first two skills in that the counselor is attending to a broader class of stimuli and must bring seemingly diverse elements into a meaningful whole. This is achieved when the counselor can summarize the client's comments and relate them to a central theme or emotion.

In each of the three studies, the counselor trainees using microteaching significantly improved their ability to perform the skills. Ivey (Allen and Ryan, 1969) summarizes the implications and future of his work as follows:

> *Most counselor-educators have spent long hours training beginners in the skills of counseling, and most would agree that training neophyte counselors in these skills is a difficult and taxing task. Microcounseling training seems to provide a framework to make professional counselor training and the training of lay counselors more meaningful and effective. Further, this type of training may be equally important to the teacher, the administrator and the student. The microteaching and microcounseling framework may be the means by which the development skills of living may be taught.*

Supervisor Training

While the microteaching format developed as a teacher-training technique, it also has great utility for the training of supervisors. Aubertine (1967) reports the following areas of investigation conducted at the microteaching clinic at *Whitman College, Walla Walla, Washington.*

1. Would the continuity in the teacher-training process be improved if the supervising teachers were trained in supervision procedures, applied them in microteaching sessions, and then evaluated the outcomes?

2. Which areas in the training of clinical supervisors would be most appropriate for the use of microteaching?

3. What effects would the training of clinical supervisors have in increasing interest in the use of microteaching as part of an inservice training program for teachers?

As a result of the supervisors' training during the clinic, Aubertine concluded that microteaching was worthwhile in the development of:

1. Adroitness in utilizing conceptual models and analyzing the teaching process with new insights into the instructional act.
2. Sophistication in interpreting high school pupil behavior.
3. Dexterity in selecting and synthesizing relevant aspects of a lesson.
4. Expertise in devising and asking probing questions of the student teacher in order to aid him to analyze his instruction and create alternatives in it.
5. Facility in human relations, especially in creating rapport with the student teacher by way of increased sensitivity to his problems.
6. Capacity to instill and build confidence within the student teacher.

Although interest in some form of inservice microteaching was generated, for a variety of reasons plans were still in an exploratory stage. Aubertine goes on to strongly recommend the use of videotape recorders as a means of increasing supervisory effectiveness in observation and assessment of instruction.

Training College Teachers

Microteaching has also been used for improving college teaching. In the spring of 1967, a 3-day workshop was conducted for college teachers at Vanderbilt University, under the auspices of the American Society for Engineering Education. Participants in the workshop came from Tennessee A & I State University, North Carolina A & I, Tuskegee Institute, Southern University, and Prairie View A & M College (Allen and Ryan, 1967). Each participant taught a 10-minute diagnostic lesson which he previously prepared. The lesson was videotaped and a 20-minute critique followed, using student (college engineering students) and supervisory feedback. During the critique, the skill of varying the stimulus was introduced, both orally and in written form. The behavior to be practiced was clarified, and the college teachers had a half-hour break to prepare for the reteach. The reteach lesson followed, and again was videotaped and analyzed in terms of the teacher's use of the skill.

A survey of the 20 participants revealed the microteaching experience to be a unanimous success. Although many were originally apprehensive about participating, all agreed it was a helpful experience and recommended microteaching experiences for other teachers.

Another report of microteaching for college teachers comes from Arye Perlberg at the University of Illinois (Perlberg and O'Bryant, 1968; Perlberg, Tinkham, and Nelson, 1968). In general, Perlberg found the use of microteaching and videotape recorders very helpful in assisting college teachers to analyze their teaching.

IPRIP

No. 17-C

RESEARCH EVIDENCE OF MICROTEACHING'S EFFECTIVENESS

A large majority of the articles reviewed for this paper are experientially based studies rather than empirical studies. However, some which present research evidence regarding behavioral change are described.

One of the better research studies was performed by Camille G. Bell at Texas Technological College with home economics teacher trainees (Bell, 1968), using a control group which engaged in student teaching without microteaching and and an experimental group which participated in microteaching after their student teaching.

The main conclusion drawn by Bell was that the addition of microteaching to the program of preparing student teachers is "a relatively more powerful treatment in contributing to gains in teaching effectiveness than the usual form of preparation provided by preservice and student teaching experience " (Bell, 1968).

In another study conducted at *Stanford University* in the summer of 1963, more than 60 teacher education candidates in the secondary education program were randomly divided into two equal groups, half given the standard observation and teacher aide experience, and the other half given concentrated training in the microteaching clinic (Bush, 1966). Findings of that experimentation were:

1. The microteaching group performed at a higher level of teacher competence than the traditionally prepared group.

2. Performance in the microteaching situation predicted subsequent classroom performance.

3. There was a significant increase in the accuracy of candidates' self-perception of teaching performance.

4. Candidates receiving student appraisal of their effectiveness improved significantly more than candidates not having access to such feedback.

5. Trainees' acceptance of microteaching's value was high.

6. Three skills subjected to experimental treatment in microteaching produced significant changes in the trainees' performance.

Reporting on the Stanford Summer Microteaching Clinic in 1965, Fortune, Cooper, and Allen (1967) stated that significant teacher behavior changes occurred over the 6-week period. Nine of the first 12 items on the *Stanford Teacher Competence Appraisal Guide* showed significant mean gain, indicative of substantial intern improvement in the items showing change.

A questionnaire designed to evaluate trainee acceptance of microteaching indicated that less than 15 percent of the interns reported that the experience was of little or no value, while more than 60 percent of the interns returning the questionnaire felt it to be either very or extremely valuable.

With reference to the 1966 Stanford Microteaching Clinic, Cooper and Stoud (*Microteaching: A Description*, 1966) found results which suggest that perhaps one teach-reteach cycle is not enough to obtain significant behavior change when the time interval between lessons is only 15 minutes. In this clinic, specific instruments for evaluating the teaching skills were used rather than the more global *Stanford Teacher Competence Appraisal Guide*. Cooper and Stroud speculate that these instruments probably have more face validity, but validity and reliability of the instruments were not established.

Reporting on a series of empirical studies on teaching skills and microteaching for the Stanford Center for Research and Development in Teaching, Berliner (1969) summarized the major conclusions. First, contrary to most generalizations which are made about the relationship of time delay and feedback for the modification of behavior, a series of experiments indicated that immediacy of the feedback (using videotapes and supervisors) is not crucial to the acquisition of some behavior. He reports that McDonald and Allen explain this result in the following way:

> *The explanation for this may be that the videotape playback reinstates the trainee's performance for him. The whole experience of viewing oneself on the videotape is quite different from receiving information from a second person about one's performance. The character of the feedback experience has changed drastically. Whatever factors might be involved in this new experience are sufficiently different so that the factor of immediacy is no longer relevant.*

Second, feedback system in which a trainee views his own behavior, with a supervisor commenting on the behavior, is a very effective technique for modifying some teaching behaviors. This conclusion was formed as a result of experiments investigating reinforcement techniques and probing questioning. The crucial aspect of the

supervisor's role is when he identifies the salient behaviors being shown on the videotape recording and reinforces both the model's and trainee's use of these behaviors.

Third, when a videotaped model performance demonstrates positive instances of the desired behavior, rather than a mixture of both positive and negative, the trainee's ability to acquire the skill in a transfer task is enhanced.

Fourth, the findings about the effectiveness of perceptual modeling (a videotape or film of a teacher demonstrating certain behaviors) are inconsistent. There is evidence that for some skills, particularly those most easily described, symbolic written descriptions of the skill will suffice. Berliner recommends that, until such time as a taxonomy outlines a classification that will provide information on which skills should be perceptually modeled and which should not, videotaped models as well as written descriptions of the skills should be used.

Fifth, and probably most important, the series of experiments indicates that teaching behaviors can be described behaviorally. This means that there is a science to teaching as well as an art of teaching.

For more information on this series of experiments investigating technical skills of teaching, modeling behavior, and microteaching, the reader should consult Berliner, 1969, and McDonald and Allen, 1967.

Basing its original approach on the technical skills developed at the Stanford Center for Research and Development in Teaching, the Far West Laboratory for Educational Research and Development, Berkeley, California, has developed an inservice training program called the "minicourse." The minicourse is defined as a product containing instructional films, handbooks, and evaluation forms; the process of microteaching; and an organization of product and process known as the instructional sequence (Langer, 1969). Using behaviorally stated outcomes and a systematic approach, the minicourse attempts to bring about teacher behavior change without the use of a supervisor.

Minicourse One, designed to increase the teacher's effective use of classroom questions for discussion purposes, has as some of its behavioral outcomes a decrease in the number of times the teacher answered his own question, an increase in the length of a pupil's response in words, a decrease in the proportion of teacher talk, and an increase in the proportion of higher cognitive questions. The following excerpts are selected from data presented by Borg (1969).

Behavior	Mean score before minicourse	Mean score immediately after	Mean score 4 months after
Answering own question	4.67	.71	.73
Length of pupil response in words	5.70	11.55	12.46
Proportion of teacher talk	53.18	29.44	30.20
Proportion of higher cognitive questions	26.16	52.27	48.58

All the preceding data represent significant pre- and postscore differences, while there was no significant drop in performance after 4 months. The early results of the minicourse data indicate a highly significant and effective training procedure for teacher behavior modification.

In an experimental training program with preservice elementary school teachers at the University of Connecticut, Storrs, using microteaching and videotape recorders, Goodkind (1968) found that the experimental group of student teachers displayed a greater awareness of specific personal habits and mannerisms; a greater awareness and use of specific teaching acts and techniques, particularly of the nonverbal type; greater insight into the activity and interrelationships of children within the classroom; and a greater awareness of the problems of structuring and pacing in their educational program.

Another study with elementary school student teachers was conducted at San Jose State College, California, in the summer of 1966 (Kallenbach and Gall). The purpose of the study was to determine the effectiveness of elementary school interns trained in a summer program by a microteaching approach as compared with interns who received conventional classroom observation and student-teaching experience. Contrary to the results reported by Bush at Stanford, the microteaching approach was not found to result in significantly higher ratings of teacher effectiveness either immediately after or a year after training. However, it was concluded that microteaching is an effective training strategy since it achieved results similar to those of conventional training methods, but in only one-fifth the time and with fewer administrative problems. An incidental finding was that pretraining ratings of teaching performance based on a brief videotaped lesson were generally good predictors of later ratings of teacher effectiveness.

One very interesting experiment involving the use of microteaching as a laboratory experience for an educational psychology course was conducted at Purdue University, Lafayette, Indiana (Van Mondfrans and others, 1969). The purpose of the study was to assess what effect microteaching experiences in an educational psychology course would

have on student perceptions regarding the relevance of educational psychology to teaching. Using four control groups and one experimental group which was instructed in teaching skills developed at Stanford, data were drawn from four sources: scores in multiple-choice exams; scores from five narrative papers; responses to the Purdue Rating Scale for Instruction; and a short questionnaire evaluating the discussion sections.

The investigators found that the scores on unit tests indicated no significant differences between the experimental group which practiced microteaching and the control groups which met with discussion leaders to discuss papers, test readings, and unit tests. Thus, the microteaching group performed as well in content knowledge of educational psychology as the control groups which spent extra time discussing course-related materials.

When the participants were asked to rate various characteristics of the course instructor and the course in general, the microteaching group rated the instructor poorer than at least two of the control groups on 10 out of 11 items. However, they gave higher ratings than the control groups to those course aspects having to do with laboratory facilities, how well the course was meeting their ultimate and immediate goals, and the presentation of subject matter (in lectures, recitation, and laboratory). The authors conclude that a microteaching experience focusing on teaching skills is an important adjunct to the educational psychology course. Subjects tend to perceive such an experience as valuable and relevant to their teaching goals.

Another research study using a microteaching format was conducted at the Teaching Laboratory at the University of Texas at Austin (Davis and Smoot, 1969). Using audio recordings and peers instead of actual students, the study was designed to yield direct evidence of differences in undergraduate teacher candidates' verbal teaching behaviors associated with their participation in the Teaching Laboratory. The Experimental group taught a lesson; received pupil, instructor, and audiotaped feedback; and taught a reteach lesson. The control group read and discussed issues but had no direct experience in teaching. Preceding and following the training sessions, pretest and posttest lessons were taught. Using a modified version of OScAR 5V called *Laboratory Observation Schedule and Record* (LOScAR), statistically significant differences between the groups were obtained for 17 of 22 variables, indicating that verbal teaching behaviors can be clearly modified using a microteaching format.

Summary and Generalizations

It is extremely difficult to summarize research findings with different objectives, subjects, conditions, and other variables. However, some generalizations about microteaching and the teaching skills approach can be made.

1. Using a microteaching format, teach-critique/reteach-critique, one can achieve positive changes in teacher behavior which result in a larger repertoire of teaching behaviors.

2. Performance in a microteaching situation can accurately predict subsequent classroom performance.

3. Trainee acceptance of microteaching as a relevant training procedure is high.

4. The feedback dimensions of microteaching is probably the crucial one in terms of changing the trainee's behavior.

5. This feedback can come from several sources; but the most powerful combination seems to be one that utilizes supervisory comments, videotape recordings, and pupil comments.

6. Contrary to previous research evidence, the immediacy of feedback (using videotapes and supervisors) is not crucial to the acquisition of some behaviors.

7. A perceptual model that demonstrates positive instances of the desired behavior, rather than a mixture of both positive and negative, is more powerful in enhancing the trainee's ability to acquire the skill in a transfer task.

8. For certain skills, a perceptual model is preferred over a written description of the skill, while for other skills the evidence is inconclusive.

IRIP

No. 17-D

EQUIPMENT UNIQUE TO MICROTEACHING

Videotaping equipment is used in most microteaching sessions. The cost, according to the articles cited in the following bibliography, ranges from $1,200 to $3,200.[1]

The simplest combination, available for $1,200, consists of one camera and one microphone, without an amplifier mixer (Perlberg). Hoehn lists the cost of a relatively inexpensive one-half inch videotape recorder at $1,700-$1,900. More elaborate setups are detailed by both authors. Perlberg includes, for $2,800, two cameras, two standing microphones, lavaliere microphone, 9-inch TV monitor, video recorder, amplifier mixer, two camera tripods, two microphone stands with bases, two sets of cords, and for increased quality (and another $425) a zoom and wide-angle lens.

Hoehn specifies the costs of audiotape recorders with nondirectional microphones ($120 each), videotapes ($3 each for 1/2 inch), and audiotapes ($1.50 each). He also notes that other items used in microteaching are already available in most schools: movie, filmstrip, and overhead projectors; file cabinets; and storage cabinets.

Another consideration, pointed out by Meier and Brudenell, is equipment maintenance, which can be a greater expense than anticipated when trainees are new to the equipment. (However, the same authors also report success in training teachers who do not have previous experience with technical equipment.) Some of the teachers in this report worked alone and filmed themselves during microteaching; others had someone do the filming for them. Microteaching may also involve a third person to observe the teacher and take notes on his performance.

Videotaping equipment can be shared by schools and can be used to make model films of the teaching performances of master teachers. Bosley suggests transferring these model films to super 8 mm. cartridges for distribution; he gives the advantages, cost, and means of doing this.

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[1]Most of the prices quoted are as of 1968.

Videotaping equipment is available in portable models. Perlberg gives instructions on how to set up portable and mobile video centers. Prepackaged microteaching lessons, called minicourses, contain model films, handbooks, and evaluation forms.

If videotaping equipment is not available, there are two alternatives. One is not to use any pictorial record of the teacher's performance. This has been done, although studies have shown that visual feedback is more effective than verbal feedback. The other, as Babin suggests, is to use a 35 mm. camera.

For additional information on equipment used in microteaching, consult the following:

Babin, Patrick. "Student's Guide to Microteaching." Ontario: University of Ottawa, Center for Cybernetic Studies, 1969.
ED 033 918.* EDRS Price: MF-$0.75; HC-Not available.

This is a manual of microteaching lessons used at the Ottawa Microteaching Clinic. The manual also includes evaluation sheets for each lesson, instruction in behavioral objectives, general information on microteaching, and technical suggestions (such as the use of a 35 mm. camera if a videotape is not available).

Bosley, Howard E., and others. *Video Processes in Teacher Education Programs: Scope, Techniques, and Assessment.* Multi-State Teacher Education Project, Monograph III. Baltimore: The Project, September 1968.
ED 025 458. EDRS Price: MF-$0.25; HC-$1.80.

Although much of the information in this monograph is aimed at the college teacher, there is very specific information about cost and availability of microteaching equipment, and transferring videotape recordings to super 8 mm. cartridge.

Hoehn, Lilburn P., ed. *Teaching Behavior Improvement Program.* Detroit: Michigan-Ohio Regional Educational Laboratory, July 1969.
ED 034 719. EDRS Price: MF-$1; HC-$12.75

This document is intended to be used by those wishing to implement an inservice teacher self-improvement program. The document includes

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a history of 2 years of field testing in real school situations, factors of concern to a leader, and lists of materials and manuals.

Meier, John, and Gerlad Brudenell. *Report: Remote Training of Early Childhood Educators*. Greeley: Colorado State College, Institute for Child Study, July 1968.
ED 027 262. EDRS Price: MF-$0.25; HC-$2.30.

This report details the training of teachers in their home schools across seven States by the Institute staff in Colorado. Included are trainee's orientation to microteaching and equipment management.

Perlberg, Arye, and others. "The Use of Portable Video Tape Recorders and Microteaching Techniques to Improve Instruction in Vocational-Technical Programs in Illinois." A Pilot Study. Final Report. Studies One and Two. Urbana: University of Illinois, Department of Vocational and Technical Education, 1968.
ED 028 253. EDRS Price: MF-$0.75; HC-$6.75.

Discussed in this pilot study are technical details for using microteaching equipment, including a description of housing units, supplies, maintenance, equipment positioning in the classroom and laboratory, and camera techniques. Also included is information and, in some cases, illustrations on the training of operators, problems, misuse of equipment, the making of model tapes, and how to set up mobile and portable video centers.

IPRIP

No. 17-E

SELECTED PROGRAMS USING THE MICROTEACHING TECHNIQUE

Microteaching has unique benefits for training school personnel. For example, it concentrates on developing in the teacher (or other school staff member) one specific skill at a time; therefore, preparation for the microteaching session is focused on one objective. As training continues, the teacher builds up a wide range of skills to enable him to cover a variety of topics and audiences. When the sessions are videotaped, microteaching has the advantage of permitting the teacher to *see* what he did rather than have to rely only on a supervisor's comments. Finally, the time, place, and number of people involved in one session are flexible.

Microteaching is also adaptable to the particular purposes of different groups of school personnel. For the preservice teacher, it is a step in his training between observation of real classrooms or participation in simulated classes and full-time student teaching. For inservice teachers, it offers a way of testing in the classroom new instructional methods, course content, and interdisciplinary approaches without waiting until the following year. It aids him in individualizing instruction and in determining the appropriate grade level for instructional materials. School supervisors can experiment with new supervisory methods utilizing microteaching. Administrators can be trained in presentation skills, particularly in the area of administrator-parent communication; they can also use microteaching to evaluate and select teachers. School psychologists can acquire specific skills necessary for counseling pupils.

Following is a list of some of the colleges and universities which have used microteaching in their training programs for secondary school teachers:

<u>Alabama</u>

Auburn University, Auburn
Livingston State College, Livingston

Arizona

Arizona State University, Temple
University of Arizona, Tucson

Arkansas

University of Arkansas, Fayetteville

California

California State College, Long Beach
California State College, Los Angeles
Chico State College, Chico
Stanford University, Stanford
University of the Pacific, Stockton
University of Southern California, Los Angeles

Colorado

University of Colorado, Boulder
University of Denver, Denver
Western State College, Gunnison

Florida

Univeristy of Miami, Coral Gables

Georgia

Georgia Southern College, Statesboro

Idaho

University of Idaho, Moscow

Illinois

Bradley University, Peoria
Eastern Illinois University, Charleston
Greenville College, Greenville
Illinois State University, Normal
Northern Illinois University, De Kalb
University of Chicago, Chicago
University of Illinois, Urbana
Western Illinois University, Macomb

Indiana

Ball State University, Muncie
DePaux University, Greencastle
Franklin College, Franklin
Goshen College, Goshen

Indiana State University, Terre Haute
Indiana University, Bloomington
Purdue University, Lafayette

Iowa

Clarke College, Dubuque
Iowa Wesleyan College, Mount Pleasant
University of Northern Iowa, Cedar Falls
Upper Iowa University, Fayette
William Penn College, Oskaloosa

Kansas

Fort Hays Kansas State College, Hays
Friends University, Wichita
Kansas State College, Pittsburg
Kansas State Teachers College, Emporia
University of Kansas, Lawrence
Washburn University, Topeka
Wichita State University, Wichita

Kentucky

Murray State University, Murray
University of Kentucky, Lexington
Western Kentucky University, Bowling Green

Louisiana

Northeast Louisiana State College, Monroe
Northwestern State College, Natchitoches

Maine

Farmington State College, Farmington
University of Maine, Orono

Maryland

University of Maryland, College Park

Massachusetts

Lowell State College, Lowell
University of Massachusetts, Amherst

Michigan

Calvin College, Grand Rapids
University of Michigan, Ann Arbor
Wayne State University, Detroit

Minnesota

College of St. Teresa, Winona
Gustavus Adolphus College, St. Peter
Macalester College, St. Paul
Mankato State College, Mankato
Moorhead State College, Moorhead
St. Cloud State College, St. Cloud
St. Olaf College, Northfield
University of Minnesota, Duluth

Missouri

Central Missouri State College, Warrensburg
Drury College, Springfield
Fontbonne College, St. Louis
Northwest Missouri State College, Maryville
Southwest Missouri State College, Springfield
University of Missouri, Columbia
University of Missouri, Kansas City

Nebraska

Chadron State College, Chadron
Concordia College, Seward
University of Nebraska, Omaha
University of Nebraska, Lincoln
Wayne State College, Wayne

New Mexico

Eastern New Mexico University, Portales
New Mexico State University, University Park
Western New Mexico University, Silver City

New York

City College of New York, New York
Hofstra University, Hempstead
State University, Albany

North Carolina

Lenoir-Rhyne College, Hickory

North Dakota

Dickinson State College, Dickinson
University of North Dakota, Grand Forks

Ohio

Bowling Green State University, Bowling Green
University of Akron, Akron
University of Cincinnati, Cincinnati

Oklahoma

Northwestern State College, Alva
Oklahoma College of Liberal Arts, Chickasha
Southwestern State College, Weatherford
University of Tulsa, Tulsa

Oregon

Eastern Oregon College, La Grande
Lewis and Clark College, Portland

Pennsylvania

Lock Haven State College, Lock Haven
Millersville State College, Millersville
Pennsylvania State University, University Park
University of Pittsburgh, Pittsburgh

South Carolina

University of South Carolina, Columbia

South Dakota

Black Hills State College, Spearfish
Northern State College, Aberdeen
University of South Dakota, Vermillion

Tennessee

East Tennessee State University, Johnson City
Memphis State University, Memphis
University of Tennessee, Knoxville

Texas

Abilene Christian College, Abilene
North Texas State University, Denton
Southwest Texas State College, San Marcos
Stephen F. Austin State College, Nacogdoches
Texas College of A. and I., Kingsville
Texas Wesleyan College, Fort Worth
University of Texas, Austin

Utah

Brigham Young University, Provo
University of Utah, Salt Lake City
Utah State University, Logan
Weber State College, Ogden

Virginia

Longwood College, Farmville
University of Virginia, Charlottesville
Virginia State College, Petersburg

Washington

Eastern Washington State College, Cheney
Washington State University, Pullman

West Virginia

Bluefield State College, Bluefield
Fairmont State College, Fairmont
Marshall University, Huntington
Shepherd College, Shepherdstown
West Virginia Institute of Technology, Montgomery
West Virginia State College, Institute
West Virginia University, Morgantown

Wisconsin

Mount Mary College, Milwaukee
Stout State University, Menomonie
University of Wisconsin, Madison
Wisconsin State University, Eau Claire
Wisconsin State University, Oshkosh
Wisconsin State University, Platteville

Wyoming

University of Wyoming, Laramie

The following references will provide additional information on micro-teaching programs:

Amershek, Kathleen, and Chandler Barbour. "Innovative Ideas in Student Teaching." Paper presented at the national conference on the Role of the State Educational Agency in the Development of

Innovative Programs in Student Teaching, October 1968, Baltimore, Maryland.
ED 205 488.* EDRS Price: MF-$0.25; HC-$2.50.

A few of the 28 programs summarized in this paper use microteaching. The name, address, and telephone number for the contact person for each program are given.

Amidon, Edmund. "Interaction Analysis and Microteaching Skill Development in Teaching." Paper presented at the American Psychological Association meeting, 1969, Washington, D.C.
ED 036 469. eDRS Price: MF-$0.25; HC-$1.40.

This paper presents a training model for use in improvement programs for inservice teachers. The model requires that the teacher understand interaction analysis and that a skilled supervisor be present. The author notes that the SKIT model may be adapted for classroom use.

Babin, Patrick. "Student's Guide to Microteaching." Ontario: University of Ottawa, Center for Cybernetic Studies, 1969.
ED 033 918. EDRS Price: MF-$0.75; HC-Not available.

This is a manual of microteaching lessons used at the Ottawa Microteaching Clinic. The manual also includes evaluation sheets for each lesson, instruction in behavioral objectives, general information on microteaching, and technical suggestions (such as the use of a 35mm. camera if a videotape is not available).

Barclay, James R. "Micro-Consultation and Behavioral Change." Paper presented at American Psychological Association Convention, San Francisco, August 30, 1968.
ED 030 136. EDRS Price: MF-$0.25; HC-$1.

This paper reports the development and field testing of a model to train or retrain school psychologists during the summer in their cognitive and behavioral approach.

Borg, Walter R. "The Minicourse Instructional Model." Paper presented at American Educational Research Association annual meeting, Minneapolis, Minn., March 1970.
ED 037 388. EDRS Price: MF-$0.25; HC-$0.40.

This paper notes the development, field testing, and advantages of minicourses. Seventeen minicourses in various stages of development or completion are listed with their course goals.

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Bosley, Howard E., ed. "An Experiment in Change." Vol. I, *Teacher Education in Transition.* Baltimore, Md.: Multi-State Teacher Education Project, May 1969.
ED 033 883. EDRS Price: MF-$1.50; HC-$17.80.

The M-STEP program encourages joint responsibility of local education agencies and teacher education institutions. Included in this report are case studies of seven State projects and a synthesis of M-STEP practices, problems, and patterns. Among goals of M-STEP programs is the expansion of microteaching into local schools.

___. "Emerging Roles and Responsibilities." Vol. II, *Teacher Education in Transition.* Baltimore, Md.: Multi-State Teacher Education Project, July 1969.
ED 033 884. EDRS Price: MF-$1.50; HC-$18.80.

This second volume on the M-STEP program includes sections on the use of microteaching, television, and other media in a variety of teacher education programs. The role of public schools is considered in both preservice and inservice education.

Calabro, Hilda. "Micro-Teaching and the Foreign Language Teacher," *Audiovisual Instruction,* 14:62-63; May 1969.
EJ 003 775.*

Microlessons, designed by Robert L. Politzer, are described in this article. The lessons are in the areas of listening, speaking, reading, and writing in a foreign language. The microlessons are part of microteaching sessions in the classroom.

Codwell, John E. "A Demonstration of the Effect of an Adaptation of Microteaching on the Instructional Behavior of Rural School Teachers." Final Report. Atlanta, Ga.: Southern Association of Colleges and Schools, October 1969.
ED 034 620. EDRS Price: MF-$0.50; HC-$4.

Microteaching in the classroom had a significant effect on the instructional behavior of 51 teachers in rural schools in Tennessee, Georgia, and Florida. This study found that the variables of sex, level of teaching, and years of experience did not influence improvement.

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*EJ documents are listed in the *Current Index to Journals in Education,* which is available from Crowell, Collier and Macmillan, Inc., 909 Third Avenue, New York, New York 10022.

Frymier, Jack R., ed. "A Workshop in the Analysis of Teaching: Interaction Analysis, Nonverbal Communication, Microteaching, Simulation." *Theory Into Practice*, 7:1-51; December 1968.
ED 031 435. EDRS Price: MF-$0.25; HC-$2.65.

One of the articles in this magazine overviews the wide variety of uses for microteaching programs and workshops, some of which are held in private and public schools.

Gall, Meredith, and others. "Minicourse Five: Tutoring in Mathematics." Paper presented at the American Educational Research Association annual meeting, March 1970, Minneapolis.
ED 037 387. EDRS Price: MF-$0.25; HC-$1.05.

Field testing of Minicourse Five among 49 teachers showed major gains in demonstration techniques, diagnostic questioning, and verbal praise. The minicourse is currently undergoing more field testing.

___. "The Relationship Between Personality and Teaching Behavior Before and After Inservice Microteaching Training." Berkeley, Calif: Far West Laboratory for Educational Research and Development, March 1969.
ED 031 448. EDRS Price: MF-$0.25; HC-$0.70.

Male and female elementary school teachers participated in a field test for a minicourse, "Effective Questioning on a Classroom Discussion." Results of testing showed that the minicourse may reduce individual differences in teaching style among males, partially cancelling out the effect of personality dispositions. Although the behavior of the female teachers changed also, personality was not found to be related to their behavior.

Gardner, Marjorie, and Rolland Bartholomew. "Microteaching, a Medium for Modifying Teacher Behavior," *Science Teacher*, 36:45-47; May 1969.
EJ 004 126

The authors specify the skills a science teacher can acquire through microteaching. They describe the benefits the teacher and his class gain, microteaching in and out of the classroom, equipment needs, and an earth science project in which college professors, science supervisors, and classroom teachers participated in microteaching.

Hoehn, Lilburn P., ed. *Teaching Behavior Improvement Program*. Detroit: Michigan-Ohio Regional Educational Laboratory, July 1969.
ED 034 719. EDRS price: MF-$1; HC-$12.75.

This document is intended to be used by those wishing to implement an inservice teacher self-improvement program. The document includes a history of 2 years of field testing in real school situations, factors of concern to a leader, and lists of materials and manuals.

Kelley, Marjorie L. "Teacher Behaviors That Improve the Pupils' Use of Language." Paper presented at the American Educational Research Association annual meeting, Minneapolis, Minn., March 1970.
ED 037 394. EDRS Price: MF-$0.25; HC-$0.95.

Minicourse Two is expected to be ready for commercial distribution by mid-1970. Designed to equip teachers to meet the needs of pupils with minimal language experience, the course was field tested with kindergarten teachers and pupils from black, migrant white, and Mexican-American communities.

Langer, Philip. "The Range of Teaching Skills That Can Be Changed by the Minicourse Model." Paper presented at the American Psychological Association annual meeting, Washington, D.C. 1969.
ED 032 293. EDRS Price: MF-$0.25; HC-$1.60.

This report describes five minicourses and their field testing in schools. All of the minicourses, each dealing with a specific skill such as questioning in a high school class discussion or tutoring elementary school mathematics, successfully provided teachers with ways of approaching problem situations.

___ and G. Edward Allen. "The Minicourse as a Tool for Training Teachers in Interaction Analysis." Paper presented at the American Educational Research Association annual meeting, Minneapolis, Minn., March 1970.
ED 037 393. EDRS Price: MF-$0.25; HC-$1.45.

Minicourse Four is designed to train teachers to categorize their own classroom behavior and improve it, to move towards indirect teaching, and to learn the fundamentals of matrix analysis. Field testing with 24 teachers indicated revision is needed. Materials include a handbook, videotape materials, and model clips.

Meier, John, and Gerlad Brudenell. *Report: Remote Training of Early Childhood Educators*. Greeley: Colorado State College, Institute for Child Study, July 1968.
ED 027 262. EDRS Price: MF-$0.25; HC-$2.30.

This report details the training of teachers in their home schools across seven States by the Institute staff in Colorado. Included are trainee's orientation to microteaching and equipment management.

"Teaching Teachers," *National Elementary Principal,* 48:30-31; February 1969.
ED 000 531.

This article related briefly the microteaching experience of a Salinas, California, teacher and the enthusiastic response to microteaching of most of the teachers who participated in the field test. Also included is a brief history of microteaching and its use.

Walsh, Huber M. "The Lagrange Study: An Effort Toward More Meaningful Preparation for Preservice Elementary Teachers in the Inner City." St. Louis: University of Missouri, 1968.
ED 025 479. EDRS Price: MF-$0.25; HC-$0.75.

The Off Campus Methods Course reported in this document offers preservice teachers the chance to teach in actual classroom settings during their junior year. The preservice and cooperating teachers plan a microteaching lesson together, which the former then teach. A 6-week pilot run at Lagrange School in Toledo received favorable comments from participants.

Woolman, Lorraine. *The Effect of Video-Taped Single Concept Demonstrations in an In-Service Program for Improving Instruction.* Houston, Texas: University of Houston, College of Education, Bureau of Education Research and Services, 1969. 68 pp. $2.50.
ED 032 771. EDRS Price: MF-$0.50; HC-$3.50.

This study investigates the effectiveness of microteaching in changing the practices and viewpoints of different types of teachers, and points out the advantages of microteaching. The study found that, although young teachers learned faster, older teachers adapted their learning more effectively to the classroom.

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No. 17-F

ANNOTATED BIBLIOGRAPHY ON MICROTEACHING

Allen, Dwight W. "Microteaching: A New Framework for In-Service Education." *High School Journal*, 49:355-362; May 1966.
ED 013 240.* EDRS price: MF-$0.25; HC-$0.30.

This article discusses a number of possible uses of microteaching for inservice education, including its use as a trial framework for team presentation, for preemployment prediction, to train supervisors, and for the countinuing supervision and evaluation of beginning teachers.

___ and Richard J. Clark. "Microteaching: Its Rationale." *High School Journal*, 51:75-79; November 1967.

This article gives a rationale for microteaching and brief history of its development at Stanford University. Also discussed are other uses of microteaching, including assessing new materials and techniques, and its use in research.

___ and James M. Cooper. "Using Microteaching in the National Teacher Corps." (Unpublished.)

This paper was designed to inform national Teacher Corps centers of microteaching's possibilities in the training of Teacher Corps personnel. The use of videotape recordings was also discussed in this training procedure.

___ and Arthur W. Eve. "Microteaching: Current Status and Potential." Amherst: University of Massachusetts, 1968. (Unpublished.)

This is an overview of microteaching's rationale, uses, and research potential.

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*ED documents are available from the ERIC Document Reproduction Service (EDRS), The National Cash Register Co., 4936 Fairmont Ave., Bethesda, Md. 20014 at prices indicated. MF indicates microfiche; HC, hard copy.

National Center for Educational Communication/OFFICE OF EDUCATION

___ and Richard E. Gross. "Microteaching - A New Beginning for Beginners." *NEA Journal*, 55:25-26; December 1965.

One of the earliest articles on microteaching discusses the Stanford Microteaching Clinic of 1964. Of particular interest are the two formats used in the microteaching class: a 5-minute and a 20-minute lesson. In an intern evaluation, 79 percent of the Stanford interns rated the Microteaching Clinic as the strongest part of their pre-internship program.

___ and Kevin A. Ryan. *Microteaching*. Reading, Mass.: Addison-Wesley, 1969.
ED 030 647. Hard copy not available from EDRS.

This is the only book written on the topic of microteaching. It describes the history of microteaching, the component-skills approach, elements and structures of microteaching, preservice and inservice applications, uses with Peace Corps and Teacher Corps, and research potential.

___ and David B. Young. "Videotape Techniques at Stanford University." *Television and Related Media in Teacher Education*. Baltimore, Md.: Multi-State Teacher Education Project, August 1967. pp. 23-24.

This is a report of the videotape's uses at Stanford University, including its use in microteaching.

___ and others. *Teaching Skills for Elementary and Secondary School Teachers*. New York: General Learning Corporation, 1969.

This multimedia package consists of written materials describing 18 teaching skills and 16 mm. color-sound films of teachers demonstrating the skills in a microteaching situation.

Ashlock, R. B. "Microteaching in an Elementary Science Methods Course." *School Science and Mathematics*, 68:52-57; January 1968.

This article deals with an adaptation of microteaching to an off-campus inservice elementary school science methods course using peers who role played students.

Aubertine, Horace E. "The Use of Microteaching in Training Supervising Teachers." *High School Journal*, 51:99-106; November 1967.

"Would continuity in the teacher-training process be improved if supervising teachers were trained through microteaching sessions? This

was the major question raised by this article. Conducted at Whitman College in Walla Walla, Washington, the study concluded that the training received by the clinical supervisors transferred to their classroom instruction.

Bell, Camille. *A Report of an Investigation of Microteaching in the Development of Teaching Performance in Home Economics Education at Texas Technological College.* Lubbock, Texas: Texas Technological College, School of Home Economics, August 1968.

This was a report on an experimental study testing six hypotheses related to teaching skill acquisition and interrater reliability.

Belt, Dwayne, and Hugh Baird. "Microteaching in the Training of Teachers: Progress and Problems." *Television and Related Media in Teacher Education.* Baltimore, Md.: Multi-State Teacher Education Project, August 1967. pp. 20-22.

This is a discussion of microteaching's uses and problems, with particular reference to the authors' experience at Brigham Young University in Utah.

___ and Clark Webb. "The Student Teacher Looks at Himself." *Utah Educational Review,* 61:18-19, 31-32; September-October 1967.

This report describes microteaching training procedures for 200 elementary and secondary trainees at Brigham Young University in Utah. The general conclusion is that microteaching procedures do not result in atypical teaching performances or defensive reactions to the presence of peers, equipment, or playback observations.

Berliner, David C. "Microteaching and Technical Skills Approach to Teacher Training." Stanford, Calif.: Stanford Center for Research and Development in Teaching. (In press.)
ED 034 707. EDRS price: MF-$0.50; HC-$3.20.

This paper reviews the history and current state of research and development of microteaching and technical skills training as related to the Stanford University program. Suggestions for future work are also included.

Borg, Walter. "The Minicourse as a Vehicle for Changing Teacher Behavior: The Research Evidence." Berkeley, Calif.: Far West Laboratory for Educational Research and Development. Paper presented at the American Educational Research Association (AERA) meeting, February 1969.

This report deals with an experiment using inservice teachers and focusing on the acquisition of specific teaching skills. The report indicates that the minicourse (self-recordings) was successful in obtaining significant behavior changes on 10 of the 12 skills taught.

___ and others. "The Minicourse: Rationale and Uses in the In-service Education of Teachers." Berkeley, Calif.: Far West Laboratory for Educational Research and Development, February 1968. ED 024 647. EDRS price: MF-$0.25; HC-$1.50.

This article discusses an adaptation of the microteaching approach to an inservice training program called the minicourse. One major difference between the minicourse and the microteaching format is that the minicourse provides a self-contained package of inservice training materials that can be used where videotape recording systems are available.

___ and others. "Video-Tape Feedback and Microteaching in a Teacher Training Model." Far West Laboratory for Educational Research and Development, University of Utah, and San Jose State College, December 1968. (Mimeographed.) ED 024 650. EDRS price: MF-$0.25; HC-$1.15.

The goals of this study were to determine the effectiveness of the minicourse model in changing student teacher behavior and to estimate the effects of the microteaching format and use of videotape feedback within the model. Results of the study indicated that the treatment groups that did not receive videotape feedback and did not practice in the microteaching format were not significantly different than groups that did with regard to the emphasized teaching behaviors.

Bush, Robert N. "Micro-teaching: Controlled Practice in the Training of Teachers." *Communication*, 48:201-07; July 1966.

This article reports a comparison between standard observation and teacher aide experiences and the microteaching experiences for two different groups of intern teachers enrolled in the Stanford University Secondary Education Program. Findings of the clinical experimentation showed that the candidates who received microteaching training performed at a higher level of teaching competence than a similar, traditionally taught group. It was also found that performance in the microteaching situation accurately predicted subsequent classroom performance.

Childs, John. "The Use of Videotape Recording in Teacher Education." *Television and Related Media in Teacher Education*. Baltimore, Md.: Multi-State Teacher Education Project, August 1967. pp. 25-26.

This is a report of the videotape uses at Wayne State University, Detroit, Michigan, including its use in microteaching.

Cook. F. S., and D. P. Brown. "Does Microteaching Have a Place in Business Education?" *Business Education World,* 48:7-9, 28-30; April 1968.

This article is a report of microteaching experiences in business education conducted at Wayne State University, Detroit, Michigan. This article cites a number of advantages and disadvantages of the microteaching concept as implemented in the business education program, using identifiable skills that were adapted from the general performance curriculum developed at Stanford University.

___. "Does Microteaching Have a Place in Business Education?" *Business Education World,* 48:14-16, 31-32, 38-39; May 1968.

This article cites a written chronology for the development of microteaching and videotaped programs at Wayne State University, Detroit, Michigan.

Cooper, James M. "Developing Specific Teaching Skills Through Microteaching." *High School Journal,* 51:80-85; November 1967.

This article emphasizes the development of specific skills in teaching; the establishment of training protocols to develop teaching skills; the employment of the teach-reteach concept to incorporate feedback into the teaching act; and the development of specific evaluative instruments to measure the skills practiced in the microteaching setting.

Davis, O. L., Jr., and B. R. Smoot. "Effects on the Verbal Teaching Behaviors of Beginning Secondary Teacher Candidates' Participation in a Program of Laboratory Teaching." Austin: University of Texas. Paper presented at AERA meeting. February 1969.

Using a modified version of microteaching - i.e., pupils were peers, but were not role playing - trainees received training in a program of laboratory teaching. The experiment was successful in changing trainees' verbal behavior from convergent questions to divergent and probing. The trainees informed less, clarifed more, and uttered fewer procedural-nonsubstantive units than before training.

Dugas, D. G. "Micro-Teaching: A Promising Medium for Teacher Retraining." *Modern Language Journal,* 51:161-66; March 1968.

This article is a report of a 1966 NDEA Institute for Advanced Studies in French at the University of Michigan, which used a standard format of

microteaching. The article concludes that microteaching is helpful in retraining experienced teachers and valuable for keeping records of teaching.

Fortune, Jim C. "Toward a Research Strategy To Investigate Attributes of Teacher Behavior." *High School Journal*, 51:93-105; November 1967.

This article emphasizes the research strategy that has grown out of the microteaching format utilizing a videotape recording of teaching encounters to gain a repeatable analysis of classroom practices. The strategy involves focusing upon a specific teaching behavior directed toward the accomplishment of a specific classroom goal, videotaping several instances of this teacher behavior, assessing student levels of goal acquisition, and then isolating instances of the behavior that result in minimum and maximum goal attainment on the part of the students. By repeating this strategy, the author asserts that relationships between specific teaching behaviors and acquisition of goal achievement on the part of students can be subjected to several formats of logical, philosophical, and statistical analysis.

___, James M. Cooper, and Dwight W. Allen. "The Stanford Summer Microteaching Clinic, 1965." *Journal of Teacher Education*, 18:384-93; Winter 1967.

This article presents a review of the Stanford Microteaching Clinic, 1965, including the organization and sequence of skills presented during that clinic, description of the structure and format of the clinic, and an analysis of its accomplishments.

Foster, F. G. "Microteaching." *Arizona Teacher*, May 1967. pp. 12-13.

This article reports the use of videotapes in a microteaching setting in order to analyze specific teaching techniques in the first viewing, to concentrate on the content presentation in the second viewing, and to focus on pupil-teacher interaction in the third viewing.

Gage, N. L. "An Analytical Approach to Research on Instructional Methods." *Phi Delta Kappan*, 49:601-06; June 1968.
ED 011 936. EDRS price: MF-$0.25; HC-$0.90.

In this article Gage describes some of the research he is conducting on teaching skills and their effect on students' learning and perceptions of the lesson.

Gibson, James W. "Using Videotape in the Training of Teachers." *Speech Teacher*, 17:107-09; March 1968.

Using a microteaching approach, the author reports how microteaching and videotaping can be used in a speech methods course.

Goodkind, Thomas B. "An Evaluation of Effectiveness of the Microteaching Technique in the Training of Elementary School Teachers." Storrs: University of Connecticut. Paper presented at AERA meeting. February 1968.

This is a report on an experimental study conducted at the University of Connecticut which indicated that teachers who had microteaching with their lessons videotaped displayed more insight into their teaching and a greater awareness of personal habits than teachers who did not have videotapes made of their microteaching lessons.

Ivey, Allen E., and others. "Microcounseling and Attending Behavior: An Approach to Practicum Counselor Training." *Counseling Psychology*, 15:5, 1-12; 1968. (Supplement.)

Microcounseling is a video method of training counselors in basic skills of counseling within a short period of time. This research studies the effects of microcounseling training procedures upon three groups of beginning counselors. Three different skills--attending behavior, reflection of feeling, and summarization of feeling--were the focus of research. These studies suggest that attending behavior and its related concepts may be described in behavioral terms meaningful to beginning counselors. Implications of the attending behavior and microcounseling frameworks are discussed.

Johnson, James A. "What's New in Teacher Education." *Illinois Education*. April 1968. pp. 328-30.

This article gives a general overview of what microteaching is as well as a brief description of the Stanford model.

Johnson, William D. "Microteaching: A Medium in Which To Study Teaching." *High School Journal*, 51:86-92; November 1967.

This article emphasized the appropriateness of microteaching as an intermediate research environment located between the conceptualization of a methodological innovation and the complexities of the field study. The Teacher Techniques Laboratory, located at the University of Illinois, is also described. In conclusion, the author asserts that microteaching has proven useful for the improvement of instruction as an environment both where teachers may gain skill and where methods of teaching techniques may be systematically investigated and improved.

Kallenbach, Warren. "Microteaching as a Teaching Methodology." Berkeley, Calif.: Far West Laboratory for Educational Research

and Development. From Proceedings: *Conference on Instructional Methods and Teacher Behavior*, 1966.
ED 013 791. EDRS price: MF-$0.25; HC-$0.40.

This article is a general overview history of microteaching, including a brief account of Stanford's Secondary Teacher Education Program, the application of microteaching to elementary intern teachers at San Jose State College, and a review of some of the research related to microteaching.

___ and Meredith D. Gall. "The Comparative Effects of Microteaching and a Conventional Training Program on the Classroom Performance of Elementary Intern Teachers." *Journal of Educational Research*. (In press.)

This study compares the effectiveness of elementary school interns trained in a summer microteaching program with interns who received conventional classroom observation and student-teaching experience. Microteaching was not found to result in significantly higher ratings of teacher effectiveness either immediately after or a year after training. However, it was concluded that microteaching is an effective training strategy since it achieved similar results when compared with conventional methods, but in only one-fifth the time and with fewer administrative problems.

Kuhn, Wolfgang. "Microteaching: Holding a Monitor Up to Life." *Music Educator's Journal*, 55:49-53; December 1968.

This article describes the training of music interns in the Stanford Teacher Education Program.

Langer, Philip. "Minicourse: Theory and Strategy." Berkeley, Calif.: Far West Laboratory for Educational Research and Development. Paper presented at AERA meeting, February 1969.
ED 028 114. EDRS price: MF-$0.25; HC-$0.95.

This article describes the minicourse concept and includes some sample instructional materials used in one minicourse.

Mayhugh, S. L. "Microteaching: A Major Component of the Pre-Service Program." *Contemporary Education*, 39:206-09; March 1968.

Analysis sessions at Indiana State University, Terre Haute, were aimed at developing alternative teaching strategies rather than evaluating good and bad behaviors. An analysis of these behaviors was conducted through a broad spectrum of instruments such as the *Teacher Classroom Activity Profile, Secondary Student Teacher Performance Profile, Withall's Social-Emotional Climate Index, Crispin's System and Interaction*

Analysis, and Mayhugh's Teacher-Counselor Interaction Analysis System.

McDonald, F. J., and D. W. Allen. "Training Effects of Feedback and Modeling Procedures on Teaching Performance." Stanford, Calif.: Stanford University, School of Education, 1967. ED 017 985. EDRS price: MF-$1 ; HC-$9.36.

This report describes a series of three experiments to assess the use of television recordings to improve teaching performance. In particular, the experiments investigate the effects of (1) self-feedback and reinforcement on the acquisition of a teaching skill, (2) feedback and practice conditions on the acquisition of a teaching strategy, and (3) modeling and feedback variables on the acquisition of a complex teaching strategy.

McGuerry, Lawrence. "Microrehearsal." *Music Educator's Journal*, 55:49-53; December 1968.

Conducted at the University of the Pacific, Stockton, California, this study describes how teaching skills were adapted from the Stanford technical skills of teaching to a music rehearsal. Included were such skills as training in set, in effective use of the voice in giving clear directions, in closure, in stimulus variation, and in establishing appropriate frames of reference.

McKitrick, M. O. "Videotaped Microteaching for Preparing Shorthand Teachers." *Journal of Business Education*, 43:285-86; April 1968.

This article reports microteaching experiences at Western Michigan University, Kalamazoo, designed to develop practice in teaching for shorthand teachers.

Meier, John H. "Long Distance Microteaching." *Educational Television*, 20. November 1968.

This article describes the application of a combination of new media to a 6-month training program for a group of persons scattered throughout the United States. Trainees were recorded on videotapes which were sent back to the Greeley, Colorado, Training Center where a staff member reviewed and prepared a critique using the same instrument as the trainees. These critiques were returned to the trainee with the videotape so that the latter could be reviewed in a critique read simultaneously.

___ . "Rationale for and Application of Microteaching To Improve Teaching." *Journal of Teacher Education*, 19:145-57; Summer 1968.

This article relates several common learning theories to the microteaching process of subjecting samples of human behavior to videotape recording, reviewing, responding, refining, and redoing (five r's). A number of applications of microteaching are cited in the article, including inservice application conducted by the Jefferson County School District in Colorado and studies conducted by the Child Study Institute at Colorado State College.

Microteaching: A Description. Stanford, Calif: School of Education, Stanford University, 1966.
ED 019 224. EDRS price: MF-$0.75; HC-$6.50.

This booklet is a compilation of articles and reports relating to the microteaching activities at Stanford University, including reports of the 1965 and 1966 microteaching clinics.

"Microteaching in Student Teacher Laboratory: University of Illinois." *School and Society*, 96:128-30; March 2, 1968.

This article is a brief description of an inservice program for instructors in the teacher preparation program.

Minnis, Douglas L. "Micro-teaching Interaction Analysis in a Teacher Education Curriculum." Davis: University of California, February 1968. (Unpublished.)

This paper is a description of attempts at the University of California, Davis, to incorporate microteaching and interaction analysis into the curriculum of the preservice and inservice teacher education programs.

Perlberg, Arye, and David C. O'Bryant. "The Use of Video-Tape Recording and Micro-Teaching Techniques To Improve Instruction on the Higher Education Level." Urbana: University of Illinois, College of Engineering, August 1968.
ED 023 314. EDRS price: MF-$0.25; HC-$2.05.

This report describes a study conducted at the University of Illinois, Urbana, utilizing videotape recorders and microteaching for the improvement of college instructors. The techniques employed resulted in favorable attitudinal responses by the participants.

___, R. Tinkham, and R. Nelson. "The Use of Videotape Recorders and Microteaching Techniques To Improve Instruction in Vocational-Technical Programs in Illinois." Urbana: University of Illinois, College of Education, 1968. (Mimeographed.)
ED 022 029. EDRS price: MF-$0.25; HC-$1.30.

This is a report of a pilot program conducted at the University of Illinois, Urbana, to augment the methods courses with microteaching laboratory experiences in order to ease anxieties about student teaching.

Schaefer, M., and M. H. Stromquist. "Microteaching at Eastern Illinois University." *Audiovisual Instruction*, 12:1064-1065; December 1967.

This article discusses microteaching experiences at Eastern Illinois University, Charleston, including students with majors in men's physical education, mathematics, shorthand, life science, and home economics. There was no focus on any particular technical skills of teaching.

Sedgwick, L. K., and H. T. Misfelt. "Microteaching: New Tool for a New Program." *Industrial Arts and Vocational Education*, 56: 34-35; June 1967.

This article is a description of a pilot teacher education program in vocational education and industrial arts at Stout State University in Menomonie, Wisconsin.

Van Modfrans, A. P., and others. "Student Attitudes and Achievement in an Educational Psychology Course after Microteaching." Lafayette, Indiana: Purdue University. Paper presented at AERA meeting, February 1969.
ED 028 994. EDRS price: MF-$0.25; HC-$0.80.

The purpose of this study was to assess the effects of microteaching experiences on the attitudes and achievements of students in an undergraduate educational psychology course. Of special interest was the question concerning what effect the experiences in an educational psychology course would have on student perceptions regarding the relevance of educational psychology to teaching.

Ward, Blaine. Personal communication regarding a nationwide survey. 1969.

This is a comprehensive survey of all NCATE (National Council for Accreditation of Teacher Education) institutions regarding usage of microteaching. This communication will be part of Mr. Ward's dissertation at the University of South Dakota, Vermillion.

Webb, Clark, and Hugh Baird. "Selected Research on Micro-Teaching." *Television and Related Media in Teacher Education*. Baltimore, Md.: Multi-State Teacher Education Project, August 1967. pp. 27-31.

This paper is a brief summary of selected research related to microteaching at three institutions--Stanford University, Hunter College, and Brigham Young University.

___ and others. "Description of a Large-Scale Micro-Teaching Program." Paper presented at the Department of Audiovisual Instruction Convention, Provo, Utah, March 25, 1968.
ED 027 250. EDRS price: MF-$0.25; HC-$0.60.

This article describes the use of microteaching at Brigham Young University, Utah, utilizing a 30-minute microteaching session in which peers rather than actual secondary and elementary students were used. The article reports that student reactions to the microteaching experience were very positive.

Young, David B. "The Modification of Teacher Behavior Using Audio Video-Taped Models in a Micro-Teaching Sequence." *Educational Leadership*, January 1969. pp. 394-95, 397, 399, 403.

This article reviews the theoretical rationale and research regarding the use of videotape models in the acquisition of a teaching skill.

EVALUATION ► PRACTICE

Effective dissemination, especially of research and development findings, can be a powerful force in advancing the cause of education. To facilitate communication between the researcher in the laboratory and the educator in the classroom, the Bureau of Research has inaugurated a special report service. These reports, prepared under USOE contracts, are interpretations of educational research and development directed at solutions to problems faced by the Nation's schools. Many State agencies and other groups concerned with education are participating in this service by repackaging and disseminating the reports to meet the needs of their local school districts. The cooperating agencies have been selected because of their strategic position in the educational community. Through this joint effort the Bureau of Research hopes to strengthen State and local educational information services and to speed the adoption of tested educational innovations.

Norman J. Boyan / Associate Commissioner for Research

putting research into educational practice